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ABSTRACT

The purpose of this study was to teach students a way to interpret paintings metaphorically. Twenty seven art education majors were taught the clustering strategy to write metaphoric interpretations of three types of paintings (slides): realistic, abstract, and non-objective. Subjects were then randomized into two groups. Prior to using the clustering strategy, the experimental group engaged in relaxed attention exercises; the control group heard a lecture about the importance of those exercises. A rating scale was developed, literal to metaphoric. Eight judges rated the written interpretations of the paintings. The correlations for interjudge reliability were highly positive. The first hypothesis was supported: the clustering strategy increases metaphoric interpretations. The second hypothesis was not supported, but by a small margin: relaxed attention exercises do not increase metaphoric interpretations uniformly across the three types of paintings. (Author)

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The metaphoric interpretation of paintings: Effects of the clustering strategy and relaxed attention exercises

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Running head: THE METAPHORIC INTERPRETATION...

Abstract

The purpose of this study was to teach students a way to interpret paintings metaphorically. Twenty seven art education majors were taught the clustering strategy to write metaphoric interpretations of three types of paintings (slides): realistic, abstract, and non-objective. Subjects were then randomized into two groups. Prior to using the clustering strategy, the experimental group engaged in relaxed attention exercises; the control group heard a lecture about the importance of those exercises. A rating scale was developed, literal to metaphoric. Eight judges rated the written interpretations of the paintings. The correlations for interjudge reliability were high positive. The first hypothesis was supported: the clustering strategy increases metaphoric interpretations. The second hypothesis was not supported, but by a small margin: relaxed attention exercises do not increase metaphoric interpretations uniformly across the three types of paintings. Additional findings emerged which warrant future investigation.

The metaphoric interpretation of paintings: Effects of the clustering strategy and relaxed attention exercises

Teaching art appreciation yields the skills to specify visual qualities, to identify styles, to recall dates and facts about the artist and the times; to state preferences supported by reasons; and to distinguish, for example, between form and pattern. Those skills, though essential to intelligent viewing, are insufficient. Lacking is the skill to interpret works of art metaphorically.

To interpret metaphorically is to make meaning. Meaning can be considered to be of two general kinds: literal and metaphoric. Literal meaning communicates, denotes. It stands in one-to-one correspondence with its referent and has consensual agreement within a culture. In contrast, metaphoric meaning evokes, connotes. It subsumes literal meaning and moves into the realm of personal experience. As such, metaphoric meaning stands in one-to-many correspondence with its referent and does not necessarily have consensual agreement within a culture. Yet, metaphoric meaning, while not exactly the same for everyone, does fall within the broad range of common experience (1).

Metaphor is considered by many to be an essential process and product of thought (Langer, 1953, 1957, 1976; Black, 1962; Ortony, 1975, 1979; Rico, 1976, 1983; Feinstein, 1979/1980, 1982; Sacks, 1979; Honeck and Hoffman, 1980; Johnson, 1981). The metaphoric thought process promotes the understanding of one thing, concept, or experience in terms of another. In that process, attributes of one thing are transferred to another. In the transfer, clusters of attributes that belong to one thing interact with those of another. The interacting attributes are like filters which highlight certain associations, suppress some, and redefine others (Johnson, 1981). After the transfer of attributes takes place, ideas, situations, and feelings are reorganized and vivified, paradoxically both condensed and expanded. The result is that associations are generated. Different or deeper levels of meaning are tapped, and new insights emerge. To restate, one thing is understood in terms of another. When the metaphoric process results in a developed work of art, that product is itself a metaphor (Langer, 1957).

If we agree with Langer that art is metaphor, then it follows that students need to be taught how to decipher the metaphor, i.e., engage in the metaphoric process. The purpose of this study (2), one of a series planned, was to teach students a way to interpret paintings metaphorically and to test the effectiveness of that method singly and in

combination with other variables.

Two assumptions were explored: first, metaphoric thinking, being holistic, can be fostered by a strategy which de-emphasizes literal/analytical thinking; second, feelings are associated more with metaphoric thinking than with literal/analytical thinking and can be evoked more readily when one is relaxed rather than tense.

Clustering is a search strategy which enables students to construct metaphoric meaning in written forms (Rico, 1976, 1983) and in visual forms (Feinstein, 1979/1980). The strategy is one of rapid searching which inherently precludes analytical thinking. Literal description, analysis, evaluation, and preference are held in abeyance. When using the clustering strategy to respond to a painting, for example, it is scanned quickly for a dominant impression which is written as a word or phrase and circled. Radiating outward from the circled word(s) are clusters of other words, reflecting the painting's qualities and the feelings evoked in the viewer. From the original dominant impression and the clusters, a metaphoric phrase or statement is written which captures the interpretation of the painting. Metaphoric interpretation via the clustering strategy is not an end in itself. Rather, it can be considered a component of the guide for teaching art criticism described by Feldman (1972, pp. 466-484).

Relaxed attention exercises (McKim, 1972; Feinstein, 1979/1980) are designed to release excess mental and physical tension and to promote heightened awareness and concentration. There were seven such exercises, six focused on the head, shoulders, eyes, arms, and hands; one focused on breathing concentration.

Two hypotheses were tested: (a) that subjects taught the clustering strategy to interpret paintings will produce more metaphoric (less literal) responses than control subjects; (b) that relaxed attention exercises before clustering will produce more metaphoric responses than will lectures about relaxed attention. In other words, all subjects were exposed to one teaching strategy designed to encourage the metaphoric interpretation of paintings. The teaching strategy was subsequently augmented in one situation by relaxed attention exercises, in another situation by a lecture.

Method

Subjects

Subjects were 27 junior year Art Education majors, ranging in age from 21-38. The scores of five subjects were excluded from the analyses due to incomplete data, leaving an N of 22.

Stimuli

The paintings were grouped into three types: realistic, abstract, and non-objective (Feinstein, 1979/1980). The three

types of paintings are based on the painting's relative adherence to or departure from realistic depiction and to its relative reduction into fundamental shapes and forms. Thus a type of painting is different from a style of painting, e.g., Fauvism, Surrealism, Minimalism, which refers to historical periods and ideologies. Realistic paintings embody images that are commonly understood and consensually nameable, e.g., in works by Harnett, Cassatt, Hopper, Warhol. Abstract paintings also embody images that are commonly understood and consensually nameable, but the images are distorted in terms of form and color or are displaced, often with a change of scale. The essence of the realistic image, however, is retained in abstract paintings, as in many works by Picasso, Magritte, Matisse, deKooning, Duchamp. Non-objective paintings have minimal referents to the consensually nameable. These referents are the circle, triangle, square and their derivative shapes as might be seen under a microscope and in works by Vasarely, Pollock, and Frankenthaler. The three types of paintings do not have rigid boundaries, but should be thought of as existing on a continuum with some overlap. Prior to the study the slides had been verified as to types and similarity within type by five faculty members of the departments of Art Education and Art History.

Design and Procedures

The study was conducted by the experimenter between

February 1 and February 15, 1982 in an art education course entitled, "Response to Visual Forms." Although the course was not one of the experimenter's teaching assignments, the instructor of the course agreed to allot two weeks of class time to the study.

There were two phases of the study. In Phase 1, the clustering strategy was taught and was used by all subjects. In Phase 2, while the clustering strategy again was used by all subjects, half of them engaged in relaxed attention exercises, the other half only heard a lecture about the importance of those exercises.

Phase 1 of the study consisted of four meetings, each approximately one hour and fifteen minutes. During the first meeting, metaphoric interpretation was explained and all subjects were given a pretest to determine the extent to which they could interpret slides of paintings metaphorically. During the second and third meetings they were taught the clustering strategy and given homework assignments. During the fourth meeting they were given a posttest. The tasks were to write metaphoric interpretations of paintings (slides). With the exception of the pretest, the clustering strategy was used to interpret the paintings. For the pre and posttests 24 slides were shown, a group of 12 for the pretest, another group of 12 for the posttest. The slides were divided into three types: four realistic, four abstract, and four

non-objective, presented in that order. The posttest slides were similar to the pretest slides, but not identical; each slide was shown for four minutes.

The second phase of the study consisted of one meeting, taking approximately two hours, during which the 22 subjects were randomly assigned to two groups--experimental and control--of 11 subjects each. Both groups used the clustering strategy to interpret a third set of 12 slides, again divided into three types and shown in the above-described sequence. Before interpreting the paintings, the experimental group engaged in 15 minutes of relaxed attention exercises; whereas the control group heard a 15 minute lecture about the importance of relaxed attention exercises.

Treatment of the Data

The results of Phase 1 of the study were analyzed with a 2 x 3 factorial analysis of variance using repeated measures on both factors, time with two levels (pre and posttests) and types of paintings with three levels (realistic, abstract, non-objective). The results of Phase 2 of the study were analyzed with a 2 x 3 factorial analysis of variance using repeated measures on one factor, types of paintings with three levels (realistic, abstract, non-objective).

Response Ratings

All responses from both phases of the study were rated according to a 6 point scale which ranged from literal to

metaphoric, 0-5 respectively. There were 792 responses, taking about seven hours to assess. There were eight judges: five faculty members and three graduate students. The faculty were from the Departments of Psychology, Educational Psychology, and Philosophy; the graduate students were from Special Education and Art Education. Seven of the eight judges were selected on the basis of attending a weekly reading group with the experimenter, studying research on metaphor and related topics. The eighth judge, an Art Education graduate student, was selected on the basis of a special interest in metaphor. Approximately three hours were devoted to training the judges. The training materials used were the responses taken from the incomplete data of five subjects. The judging sessions proper occurred on two consecutive occasions.

The judges rated the responses independently. With rating scale and responses to be rated before them, they were shown the slides that elicted the responses. They were told to bear in mind the overriding question: What else can this painting represent? For example, if a response to Hopper's House by the Railroad was an elaborated literal description of the house, a low rating was given, i.e., a 1 or 2 on the scale ranging from 0-5. If a response to the same painting did not refer to the house, but referred to metaphors of loneliness, alienation, old-age, abandonment, and the like, a high rating

was given, i.e., a 4 or 5.

Table 1 shows the Frequency Distribution of Interjudge Reliability.

Insert Table 1 about here

Of the 27 correlation coefficients shown, 19 or 70% are .60 or greater, the smallest being .13, the highest .86. Although there were eight judges and 792 responses, four judges rated the responses of each subject; each judge rated approximately 396 responses (one judge rating as few as 352, another as many as 429).

Results

Phase 1 (N=22: 19 Females, 3 Males)

The results of Phase 1 indicate that the use of the clustering strategy increases metaphoric responses. The posttest mean rating is higher than that of the pretest, $p < .05$, shown by the F of 8.98 in Table 2, the ANOVA summary. The mean overall rating for the posttest is 3.12, and for the pretest 2.71. Those results are displayed in Figure 1.

Insert Table 2 and Figure 1 about here

Two additional tests were done: one to evaluate the differences for types of paintings; the other to evaluate the

interaction effect between pre and posttests by types of paintings. The differences for types of paintings are significant, $p < 0.5$, indicated by the F of 4.72 in Table 2. There is no significant interaction effect, shown by the F of 1.68. The mean rating for each type of painting differs from one another, as displayed in Figure 1. Realistic paintings are the lowest, abstract paintings somewhat higher, and non-objective paintings still higher. Also evident in Figure 1 is that the mean rating for the three types of paintings increases roughly in the same magnitude on both testing occasions.

Phase 2 (Experimental Group: N=11, 10 Females, 1 Male; Control Group: N=11, 9 Females, 2 Males)

The results of Phase 2 indicate that relaxed attention exercises added to the clustering strategy do not significantly increase metaphoric responses uniformly across the three types of paintings. The difference between the mean rating of the experimental and control groups closely approaches, but does not quite reach, statistical significance. The probability level was set at < 0.5, the level attained is .0527, indicated by the F of 4.24 in Table 3, the ANOVA summary. The overall mean rating for the experimental group is 3.29, for the control group 2.72. Those results are displayed in Figure 2.

Insert Table 3 and Figure 2 about here

As was the case in Phase 1, two additional tests were done: one to evaluate differences for types of paintings; the other to evaluate the interaction between the two groups by types of paintings. There is a significant difference for types of paintings, $p < .0001$, shown by the F of 16.54 in Table 3. In contrast to Phase 1, there is a significant interaction effect, $p < .02$, shown by the F of 4.94. The interaction effect indicates a differential influence of training by types of paintings. The mean rating for the experimental group on the realistic and abstract paintings is 3.05 and 3.28; for the control group 1.98 and 2.63, respectively. Those results are displayed in Figure 2. The pattern in Figure 2, similar to that in Figure 1, shows the mean rating for realistic paintings to be the lowest, abstract paintings somewhat higher, and non-objective paintings still higher.

Discussion

Subjects and the Experimenter's Role

That females outnumbered males in both phases of the study could influence the results. Females may respond differently from males to the clustering strategy and to the relaxed attention exercises. Those factors, as well as the

age differential, though deemed outside the scope of this study, need to be investigated in future studies. That the teaching was conducted by the experimenter is another factor which could influence the results. Training another instructor was not an option. Rather than postponing the study for an indefinite time, the experimenter/teacher role prevailed.

Interjudge Reliability

Metaphor research, being a relatively new field of study, does not have a large variety of standardized measuring instruments, nor many that consistently yield high positive interjudge correlations (Pollio and Smith, 1980). The high correlations obtained from the newly devised rating instrument, though encouraging, may be due to its simplicity. Recall that the judges were required to rate written interpretations of paintings on the extent to which they were literal or metaphoric, 0-5, respectively. As such, the scale was not designed to determine the quality of metaphoric responses, i.e., whether they were novel or common, more analogic or metaphoric; nor whether they were more anthropomorphic, "feeling-morphic," or "object-morphic." Neither was the scale designed to determine the referential adequacy of responses, i.e., requiring the judges to locate the visual qualities in the work that may have prompted the interpretation (Pepper, 1945). This is not to imply that such

scales should not be developed. It is to underscore the nature and function of the one used in this initial study and to suggest a possible reason for its success.

Phase 1

The main finding of Phase 1 was that the clustering strategy increased metaphoric interpretations in about equal proportion for the three types of paintings. Secondary findings were differences for types of paintings and the absence of an interaction effect.

It is not surprising that use of the clustering strategy increased metaphoric interpretations. In general, when students are taught, they will learn. The clustering strategy engages the student with the work of art on a personal level. Whereas factual knowledge about the work is not a sine qua non, the ability to respond in the "here and now" is. In addition to encouraging personal engagement with the work, the clustering strategy apparently promoted some concept generalization. Recall that the posttest paintings were similar to but not the same as the pretest paintings. Also between the pre and posttest were two teaching sessions and two homework assignments. In those four practice sessions students interpreted paintings similar to but not the same as those in the pretest. In other words, the concepts taught were applied to different instances, i.e., different paintings

within and among the three types.

Generalizing the results, however, must be restrained due to the lack of a "formal" control group. This lack reflects one of the reality constraints of doing research, particularly at the college level. Recall that the subjects were junior year Art Education majors. Because of the junior year course sequence and instructional load, to have had a control group would have denied those subjects the opportunity to learn the clustering strategy and would have interfered with the Department's program. An argument also can be made that the subjects functioned as their own "informal" control group since they had not been exposed to the clustering strategy in previous classes. Indeed, when the subjects were asked to interpret paintings metaphorically in the pretest, their scores were lower than those of the posttest.

The issue of randomization of slides arises in the finding of type difference--the mean rating for realistic paintings being the lowest, abstract paintings somewhat higher, and non-objective paintings still higher. As noted earlier, in all testing situations the slides were presented in distinct sets: four realistic slides were shown first, four abstract slides second, and four non-objective slides third. The slides were not randomized. The reasoning was that, given the time constraints, a clearer picture of the results for each type of painting would emerge if subjects

were not required to switch categories rapidly. One might accept that explanation but still question the sequence of slide sets. One, however, might argue for total randomization of slides and maintain that the high ratings on non-objective paintings were due to their third place in the sequence, i.e., the subjects had a chance to practice on the first two types. One also might argue that, randomization not withstanding, non-objective paintings lend themselves to metaphoric interpretations more readily than do realistic and abstract paintings. Therefore, regardless of their place in the sequence, non-objective paintings would have generated the most metaphoric responses. These are possible confounding variables which would need to be controlled in future studies. It is interesting to speculate on what might have happened if the three types of paintings had been randomized; if the sequence of presentation had been reversed; if the identical paintings had been shown during the pre and posttest; if paintings of only one type had been shown; if fewer paintings had been shown.

The other finding was the absence of a significant interaction between pre and posttests by types of paintings. If there had been an interaction effect, the types of paintings that generated fewer metaphors at pretest would have generated relatively more at posttest. But that was not the case. Realistic paintings elicit the fewest metaphors both

times, abstract paintings more, and non-objective paintings even more. This finding may be affected by one or all of the several variables mentioned above: non-randomization, the effects of practice, or the relative ease in interpreting non-objective paintings as opposed to realistic and abstract ones.

Phase 2

The main finding of Phase 2 was that relaxed attention exercises added to the clustering strategy did not increase metaphoric interpretations across the three types of paintings. Secondary findings were differences for types of paintings and the presence of an interaction effect.

It is surprising that relaxed attention exercises did not significantly increase the number of metaphoric interpretations for all types of paintings. Generally, when one is more relaxed than tense, there is a freer flow of associations. This finding may be due to the small sample.

Yet when the findings of the two additional tests are considered, the issue of the small sample changes. In general, effects with small samples which achieve statistical significance can be interpreted as reflecting larger effects because the magnitude of the standard error is inversely related to the size of the sample. The finding of the first additional test--type difference--was strong, $p < 000.1$.

Similar to Phase 1 of the study, the mean rating for realistic paintings was the lowest, abstract higher, and non-objective the highest. The higher mean rating for the non-objective paintings suggests the same explanations as those in Phase 1. Last place in the sequence of presentation, i.e., non-randomization, may have given an advantage to the non-objective paintings; or perhaps they were easier to interpret than abstract or realistic paintings.

To further explain the strong difference between painting types, it is necessary to consider the second additional finding, the interaction effect, $p < 0.2$. The control group's mean rating for realistic paintings was lower than the experimental group's, 1.98 and 3.05 respectively. This difference was probably due to the lecture. The discursive nature of the lecture paralleled the literal nature of the realistic paintings, which were shown first and thereby impeded metaphoric responses. Because realistic paintings, by definition, embody consensually agreed upon and readily nameable phenomena, the paintings are likely to elicit literal interpretations. One is inclined to name what one sees. Naming is primarily an analytic process which by nature tends to obstruct metaphoric interpretations, primarily a holistic and immediate process. In other words, two processing modes compete for primacy, and the one operating at the moment usually "wins." The notion of an impeding effect of the

lecture on the control group's mean rating for realistic paintings is given added credence by the group's subsequent increase in metaphoric interpretations of abstract and non-objective paintings.

Also consistent with the foregoing explanation regarding the interaction effect is the experimental group's higher mean rating for realistic paintings. Although the finding concerns the nonconfirmed hypothesis, a speculation is offered. It may be that relaxed attention exercises do make a difference in the metaphoric interpretation of realistic paintings. The tendency to interpret literally those images imbued with literal cues is restrained when one is somewhat relaxed. The exercises, apparently, did not influence the interpretation of abstract or non-objective paintings.

Summary and Conclusions

The premise of this study is Langer's contention that art is metaphor. The purpose of the study was to teach students a way to interpret paintings metaphorically and to test the effectiveness of that method singly and in combination with other variables. Explored were two assumptions: first, that metaphoric thinking can be fostered by a strategy which de-emphasizes literal thinking; second, that feelings are associated more with metaphoric thinking than with literal thinking and can be evoked more readily when one is relaxed rather than tense.

Two hypotheses were tested: (a) that subjects taught the clustering strategy to interpret paintings will produce more metaphoric (less literal) responses than control subjects; (b) that relaxed attention exercises before clustering will produce more metaphoric responses than will lectures about relaxed attention. A newly devised rating instrument yielded high positive correlations. The first hypothesis was supported, the second was not supported but by a small margin. Related to those hypotheses were four provocative findings which warrant further investigation. Because the study is the first of its kind and has certain limitations, the findings may not be generalized but must remain within their contextual confines.

The study's educational significance, of course, is a different issue. If one believes in the value of metaphoric thinking and agrees with Langer that art is metaphor, teaching students to think metaphorically could have an educational return that far exceeds the investment. Once having learned to metaphorically interpret works of art on a personal level, meaning is expanded and enriched. With additional training, it is not only possible to become more sensitive to society's visual metaphors, but also to begin to question the values embedded in them.

References

Black, M. (1962). Models and metaphors. New York: Cornell University Press.

Dewey, J. (1958). Art as experience. New York: Capricorn Books.

Feinstein, H. (1980). A college drawing curriculum integrating Langer's theory of symbolization and aspects of hemispheric processes (Doctoral dissertation, Stanford University, 1979). Dissertation Abstracts International, 40.

Feinstein, H. (1982). Meaning and visual metaphor. Studies in Art Education, 23(2), 45-55.

Feldman, E. (1972). Varieties of visual experience. New Jersey: Prentice-Hall Inc.

Honeck, R. P. & Hoffman, R. R. (Eds.). (1980). Cognition and figurative language. New Jersey: Lawrence Erlbaum Associates, Publishers.

Johnson, M. (Ed.). (1981). Philosophical perspectives on metaphor. Minneapolis: University of Minnesota Press.

Langer, S. (1953). Feeling and form. New York: Charles Schribner's Sons.

Langer, S. (1957). Problems of art. New York: Charles Schribner's Sons.

Langer, S. (1976). Philosophy in a new key (3rd ed.). Massachusetts: Harvard University Press.

McKim, R. (1972). Experiences in visual thinking. California: Brooks/Cole Publishing Company.

Ortony, A. (1975). Why metaphors are necessary and not just nice. Educational Theory, 25, 45-53.

Ortony, A. (Ed.). (1979). Metaphor and thought. London: Cambridge University Press.

Pepper, S. (1945). The basis of criticism in the arts. Cambridge: Harvard University Press.

Pollio, H. R. & Smith, M. K. (1980). Metaphoric competence and complex human problem solving. In R. P. Honeck & R. R. Hoffman (Eds.), Cognition and figurative language (pp. 365-392). New Jersey: Lawrence Erlbaum Associates, Publishers.

Rico, G. L. (1976). Metaphor and knowing: Analysis, synthesis, rationale. Unpublished doctoral dissertation, Stanford University.

Rico, G. L. (1983). Writing the natural way. Boston: Houghton Mifflin Company.

Sacks, S. (Ed.). (1979). On metaphor. Chicago: The University of Chicago Press.

Author Notes

For those interested in replicating the study, a list of slides, facsimiles of materials and instructions for their use are available from the author upon request.

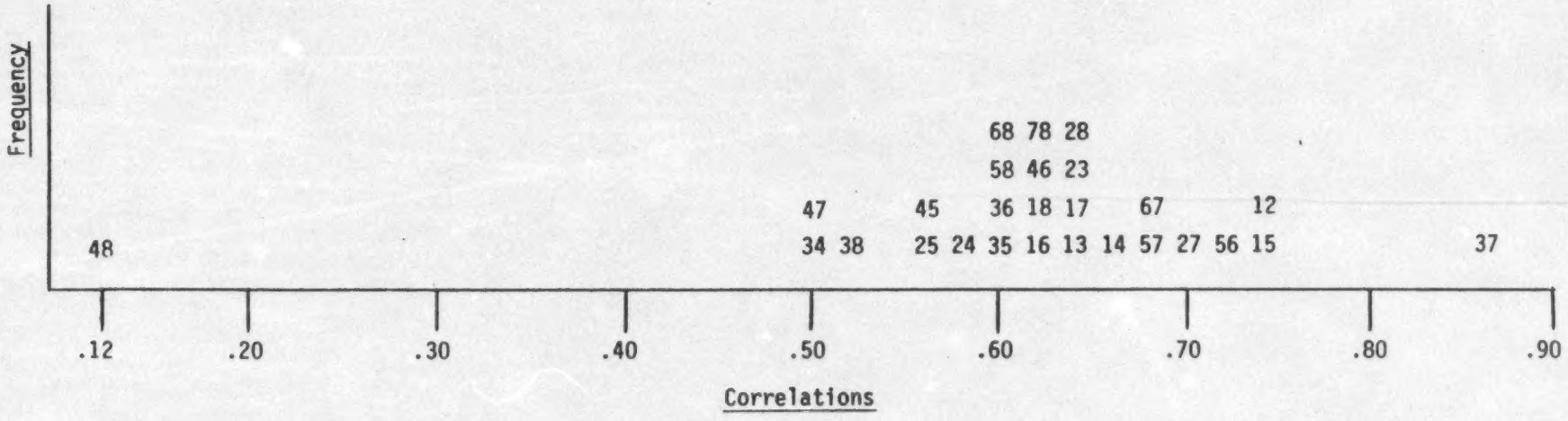
Footnotes

1. A fuller account of the concept of meaning and metaphor can be found in Feinstein, 1982.

2. An abridged version of this study was presented at the National Symposium for Research in Art, University of Illinois, September 24, 1982.

Table 1

Frequency Distribution of Interjudge Reliability



ssss Note: Each pair of digits indicates the judges, numbered 1-8, whose ratings entered into the correlation. The mean correlation is .74.

Table 2

ANOVA of Metaphorical Interpretations for Phase 1:

Pre and Posttest by Types of Paintings

Source	df	MS	F
Between Subjects	21		
Within Subjects	110		
Times	1	5.65131	8.98*
Error Times	21	0.62967	
Types of Paintings	2	1.54673	4.72*
Error Types	42	0.32795	
Times x Types	2	0.36029	1.68
Error Times x Types	42	0.21393	

* $p < 0.5$

Figure 1

Phase 1: Pre and Posttest Mean Rating by Types of Paintings and Order Presented

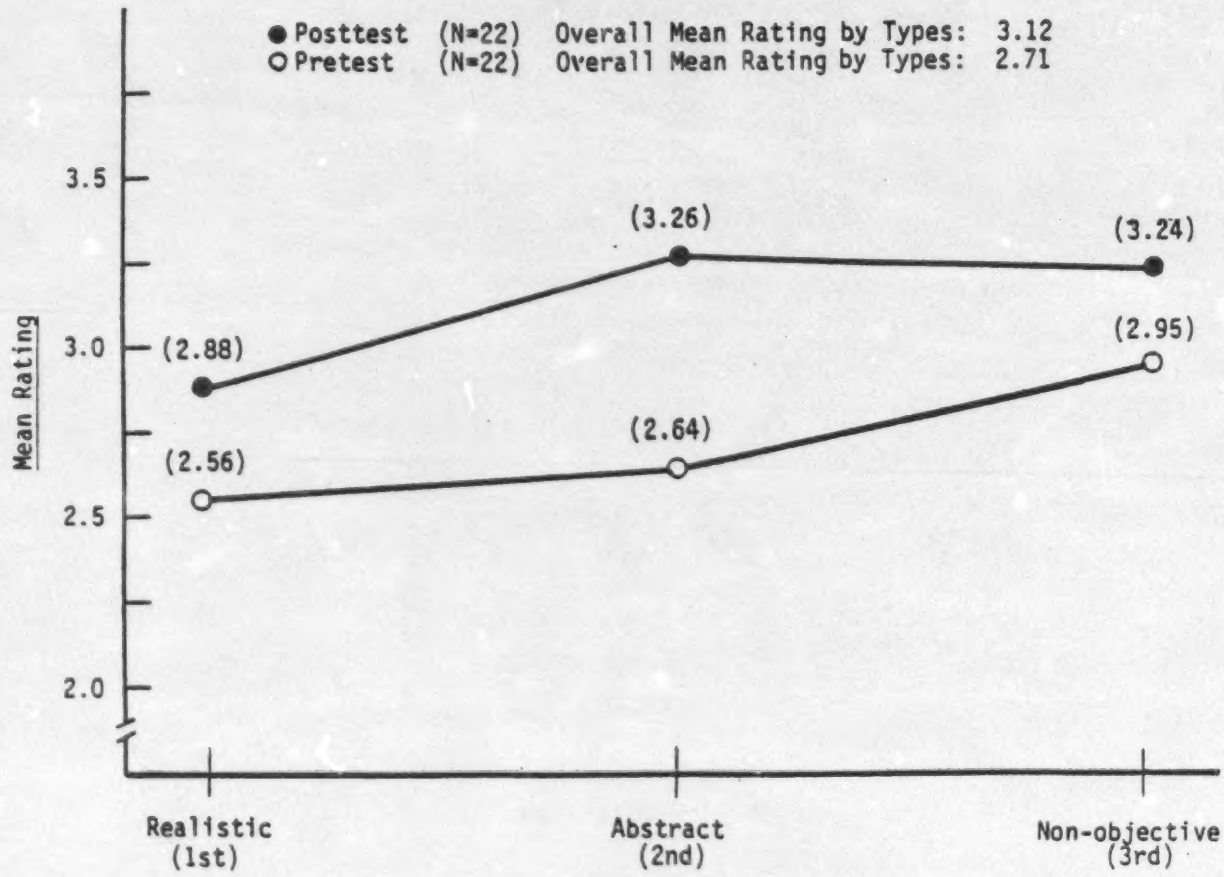


Table 3

ANOVA of Metaphorical Interpretations for Phase 2:

Experimental and Control Groups

by Types of Paintings

Source	df	MS	F
Conditions	1	5.25592	4.24
Error Between	20	1.23944	
Types of Paintings	2	5.75941	16.54**
Conditions x Types	2	1.72058	4.94*
Error Within	40	0.34827	

* $p < .02$, ** $p < .0001$

Figure 2

Experimental and Control Groups' Mean Rating

by Types of Paintings and Order Presented